

REMARKS

At the time of the Final Office Action dated October 15, 2004, claims 1-6, 9-21, and 24-31 were pending and rejected in this application. Claim 3-4 and 18-19 have been cancelled, and independent claims 1, 16, and 31 have been amended. Applicants submit that the present Amendment does not generate any new matter issue.

CLAIMS 1 AND 16 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAKURA ET AL., U.S. PATENT PUBLICATION NO. US 2001/0028737 (HEREINAFTER TAKAKURA), IN VIEW OF ISHIKAWA ET AL., U.S. PATENT NO. 5,926,292 (HEREINAFTER ISHIKAWA)

On pages three and four of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify Takakura in view of Ishikawa to arrive at the claimed invention. This rejection is respectfully traversed.

Initially, Applicants note that independent claims 1 and 16, as amended, recite that one color component with the largest variance is selected among the color components as a target component. These claims also recite that a small region is divided into two sections by preparing region information. Furthermore, the classification of picture elements into two groups does not result from replacing the multi-valued data of picture elements with 1 or 0. Instead, a representative color for each section is extracted based upon the region information and color data of picture elements in the section, as recited in the claims. By selecting one color with the

largest variance as a target color, and dividing the small region into two sections using the target color, it is possible to select the target color with little visual difference from the original.

Takakura teaches the binarization of image data. In order to reduce the load of the image processing, Takakura binarizes color data obtained from originals, such as a newspaper, monochrome magazine, and report. For binarization, a histogram is drawn for each color component, and from the histograms, the color is selected. The selecting is performed using a peak value in a high-density region and a peak value in a low-density region. The hierarchical relationship between the peak values is then investigated, and if the high-density-side peak value is larger than the low-density-side peak value, the low-density-side is set to the background.

To perform an accurate setting for a color image, the hierarchical relationships are detected regarding each RGB color component. The color selection is conducted according to the comparison between the hierarchical relationships. For instance, if two colors out of three colors R, G, and B satisfy a condition where the high-density peak value is larger than the low-density peak value, pixels with either one or two of these two colors that exceed a certain threshold value are defined as "black," while the other pixels are defined as "white." The other color is not subjected to the binarization, and the threshold value is defined by the two peak values.

As already discussed above, the color in Takakura is selected at the binarization processing. Takakura, however, fails to disclose that the color component with the highest variance is selected as a target color. Furthermore, because of the binarization taught by

Takakura, the image data itself is replaced with 0 or 1, whereas in the claimed invention the region information is prepared for the dividing into two sections, which is also not taught by Takakura.

Ishikawa teaches an index selection circuit 306 for determining from which one of the two representative colors the pixels in the block are to be allocated (see column 14, lines 7-32). However, selecting of the index is executed after the determination of the representative color. Thus, the representative color is not extracted by using the region information and the data of each pixel, as recited in the claims.

With regard to the claimed calculation of the statistics of variances, the Examiner cited Fig. 8 and column 10, line 5 of Takakura (paragraph 12 in the Office Action with regard to claim 3, now canceled) to teach this particular limitation. However, Applicants have been unable to find such a teaching regarding the statistics of the variances from this citation. Furthermore, the Examiner cited Makita, U.S. Patent No. 6,269,186, to teach "using the average color value as the threshold value." However, Makita fails to disclose using the average value of color with the largest variance.

Thus, for the reasons stated above, Applicants submit that even if one skilled in the art were motivated to modify Takakura in view of Ishikawa, the claimed invention would not result. Applicants, therefore, respectfully solicit the withdrawal of the imposed rejection of claims 1 and 16 for obviousness based upon Takakura in view of Ishikawa.

**CLAIMS 2 AND 17 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED
UPON TAKAKURA IN VIEW OF ISHIKAWA AND FURTHER IN VIEW OF ALLEBACH ET AL., U.S.
PATENT NO. 5,544,284 (HEREINAFTER ALLEBACH)**

On pages four and five of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the combination of Takakura and Ishikawa in view of Allebach to arrive at the claimed invention. This rejection is respectfully traversed.

Claims 2 and 17 respectively depend upon independent claims 1 and 16, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 1 and 16 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa. Specifically, the combination of Takakura in view of Ishikawa fails to teach or suggest that the color component with the highest variance is selected as a target color. The tertiary reference to Allebach also does not disclose this concept. Accordingly, the proposed combination of references would not yield the claimed invention. Applicants, therefore, respectfully submit that the imposed rejection of claims 2 and 17 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa and Allebach is not viable and, hence, solicit withdrawal thereof.

**CLAIMS 3 AND 18 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED
UPON TAKAKURA IN VIEW OF ISHIKAWA AND FURTHER IN VIEW OF MAKITA, U.S. PATENT NO.
6,269,186**

Claims 3 and 18 have been canceled, and thus, this rejection is moot.

CLAIMS 4 AND 19 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAKURA IN VIEW OF ISHIKAWA AND FURTHER IN VIEW OF KOBAYASHI, U.S. PATENT NO. 5,608,851

Claims 4 and 19 have been canceled, and thus, this rejection is moot.

CLAIMS 5 AND 20 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAKURA IN VIEW OF ISHIKAWA AND FURTHER IN VIEW OF KIMURA ET AL., U.S. PATENT NO. 5,487,119 (HEREINAFTER KIMURA)

On pages eight and nine of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the combination of Takakura and Ishikawa in view of Kimura to arrive at the claimed invention. This rejection is respectfully traversed.

Claims 5 and 20 respectively depend upon independent claims 1 and 16, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 1 and 16 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa. Specifically, the combination of Takakura in view of Ishikawa fails to teach or suggest that the color component with the highest variance is selected as a target color. The tertiary reference to Kimura also does not disclose this concept. Accordingly, the proposed combination of references would not yield the claimed invention. Applicants, therefore, respectfully submit that the imposed rejection of claims 5 and 20 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa and Kimura is not viable and, hence, solicit withdrawal thereof.

CLAIMS 6 AND 21 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAKURA IN VIEW OF ISHIKAWA AND FURTHER IN VIEW OF YADA, U.S. PATENT NO. 6,285,458

On pages nine and ten of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the combination of Takakura and Ishikawa in view of Yada to arrive at the claimed invention. This rejection is respectfully traversed.

Claims 6 and 21 respectively depend upon independent claims 1 and 16, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 1 and 16 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa. Specifically, the combination of Takakura in view of Ishikawa fails to teach or suggest that the color component with the highest variance is selected as a target color. The tertiary reference to Yada also does not disclose this concept. Accordingly, the proposed combination of references would not yield the claimed invention. Applicants, therefore, respectfully submit that the imposed rejection of claims 6 and 21 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa and Yada is not viable and, hence, solicit withdrawal thereof.

CLAIMS 9-13, 24-28 AND 31 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAICHI ET AL., U.S. PATENT NO. 5,787,192 (HEREINAFTER TAKAICHI), IN VIEW OF ALLEBACH

On pages ten through thirteen of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify Takaichi in view of Allebach to arrive at the claimed invention. This rejection is respectfully traversed.

The Examiner referred to column 1, lines 49-51 of Takaichi to teach "preparing region color data." This passage in Takaichi teaches that each block is encoded into a component representing either one of colors A and B and a bit map. In the subsequent paragraph, Takaichi teaches that the color reduction processing is described so that the full colors are reduced in 256 colors or 16 colors. Allebach describes that dividing is repeated until the number of cells reaches a desirable number. However, neither Takaichi nor Allebach teaches or describes that region information is prepared according to whether or not the color value is larger than the average of color with the highest variance as recited in independent claims 1, 16, and 31. Furthermore, since claims 9-13 and 24-28 respectively depend upon claims 1 and 16, Applicants respectfully solicit withdrawal of the imposed rejection of claims 9-13, 24-28, and 31 under 35 U.S.C. § 103 for obviousness based Takaichi in view of Allebach.

**CLAIMS 14 AND 29 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED
UPON TAKAKURA IN VIEW OF ISHIKAWA AND ALLEBACH**

On pages fourteen and fifteen of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the combination of Takakura and Ishikawa in view of Allebach to arrive at the claimed invention. This rejection is respectfully traversed.

Claims 14 and 29 respectively depend upon independent claims 1 and 16, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 1 and 16 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa.

Specifically, the combination of Takakura in view of Ishikawa fails to teach or suggest that the color component with the highest variance is selected as a target color. The additional reference to Allebach also does not disclose this concept. Accordingly, the proposed combination of references would not yield the claimed invention. Applicants, therefore, respectfully submit that the imposed rejection of claims 14 and 29 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa and Allebach is not viable and, hence, solicit withdrawal thereof.

CLAIMS 15 AND 30 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAKURA IN VIEW OF ISHIKAWA AND FURTHER IN VIEW OF ALLEBACH AND MAKITA

On page sixteen of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the combination of Takakura and Ishikawa in view of Allebach and Makita to arrive at the claimed invention. This rejection is respectfully traversed.

Claims 15 and 30 respectively depend upon independent claims 1 and 16, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 1 and 16 under 35 U.S.C. § 103 for obviousness based upon Takakura in view of Ishikawa. Specifically, the combination of Takakura in view of Ishikawa fails to teach or suggest that the color component with the highest variance is selected as a target color. The additional references to Allebach and Makita also do not disclose this concept. Accordingly, the proposed combination of references would not yield the claimed invention. Applicants, therefore, respectfully submit that the imposed rejection of claims 15 and 30 under 35 U.S.C. § 103 for obviousness based

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upon Takakura in view of Ishikawa, Allebach, and Ishikawa is not viable and, hence, solicit withdrawal thereof.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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